EDITORIAL

"A Square Deal for Square Dealers"

Retail merchants are realizing more and more that unfair price cutting on standard goods is making it increasingly hard for them to make a living profit. Of course jobbers and manufacturers are no less affected but, as Edmund H. Whittier says, "A triangle of support is needed to get the much needed legislation on price standardization through Congress."

Mr. Whittier is Secretary-Treasurer of The American Fair Trade League, an organization which is leading a fight to crystallize sentiment behind these better business measures. Four bills were introduced in the present Congress and indications are that all will be passed after the presidential election. In substance, these bills seek to restore to the manufacturers of branded goods the legal right to designate fair, uniform, living-profit prices at which such products shall be resold.

A jobber or dealer should not be allowed to demoralize a manufacturer's business by ruthlessly and wilfully cutting prices, especially on merchandise which is well known and of standard quality. To cope successfully with this situation we not only need adequate legislation but also proper organization of industry of which the Cincinnati Candy Association is a shining example. These practical problems of selling candy at a profit, affecting not only the individual success of the manufacturers and distributors but also the market for confectionery, are dealt with in a practical manner which is fearless but effective and absolutely fair and square to all. Robert M. Dederich, Secretary of the Association, is primarily a merchandising man which is largely responsible for the unprecedented success of his organization work. The substantial increase in the consumption of candy and the marked improvement in trade conditions in the Cincinnati zone is a tribute to Mr. Dederich's leadership and program of insisting on a square deal for square jobbers and dealers. More power to his big stick. We need more Bob Dederichs in business and more business in government and more government in business.

Organization and Arbitration

Sure we are in favor of arbitration which is a much discussed subject before the industry at this time first because in order to arbitrate the industry must be properly organized and a constructive spirit of cooperation must prevail. Organization which accomplishes a close working relationship between the various local zones of the country, by having each zone organization affiliated (by representation) with the national body of the industry, will be very far-reaching and be the means of solving many petty problems and dealing effectively with destructive conditions which today are sapping our profits.

The High Cost of "Cheap Credit"

Credit is too cheap and that is the one chief factor for the bulk of today's enormous credit losses through fraudulent bankruptcy, aggregating $200,000,000 annually, in the opinion of W. F. H. Koelsch, president of the New Netherland Bank of New York City. In the monthly bulletin of the New York Credit Men's Association, Mr. Koelsch asserts that the sales department of the average business house dominates the credit department, "volume of sales is preferred to a good balance sheet" and "when the two are weighed in the same scale the good balance sheet will kick the beam almost invariably."

It is usually a question of getting the goods in and the orders out, rather than compliance with the terms of purchase, continues the bank president. Ignorance on the part of credit men plays a prominent part in making for losses. Credit is extended by one firm because it hears or knows that some other firm is giving the customer a line of credit also. "Sheeplike" is the way Mr. Koelsch expresses this "follow the leader policy" on the part of the credit granters. He points out that the man who goes "bust" is usually careful to pay his bills at a few houses promptly.

"Weakness in the credit department," says Mr. Koelsch, "is one of the chief factors in credit losses through fraud, for if the credit man knows his business, knows that he knows it and has the aggressiveness to insist that the sales department and the 'boss' himself respect the decision of the credit desk, losses through commercial crooks will be greatly lessened."—*The N. Y. Sun.*

Re Evaporated Milk

The following important corrections should be noted in connection with the article on "Evaporated Milk," by Herbert C. Hooks, page 32, August issue THE MANUFACTURING CONFECTIONER. Typographical errors in transposing decimal points are responsible for the incorrect statement of percentages in reference to the physical properties of milk (page 33). The paragraph should read as follows:

THE PHYSICAL PROPERTIES OF MILK.

Milk consists usually of 12.35% milk solids and 87.65% water and this 12.35% milk solids consists usually of 3.6% milk fat, 2.6% casein, .6% albumin, 4.5% milk sugar, .7% mineral matter and .35% miscellaneous elements, all of which are very important and essential to the life, growth and functioning of the body, etc.

Also in next to the last line in the first paragraph under the chapter entitled "Economy," instead of 2.5 make it read 3.5. The sentence should appear as follows:

One hundred pounds of market milk contains varying weights of both butter fat and solids not fat but an average of 3.5 pounds and 8.5 pounds of solids not fat is useable.

We beg your pardon, Mr. Hooks.

A Little Journey Through

Uncle Sam's Candy Laboratory

The Carbohydrate Laboratory of The Bureau of Chemistry Department of Agriculture, Washington, D. C., where much needed research work in the manufacture of confectionery is being done under the direction of Dr. H. S. Paine, Chemist in Charge, and J. Hamilton, a practical candy maker.

by a Staff Correspondent

Exclusively for The Manufacturing Confectioner

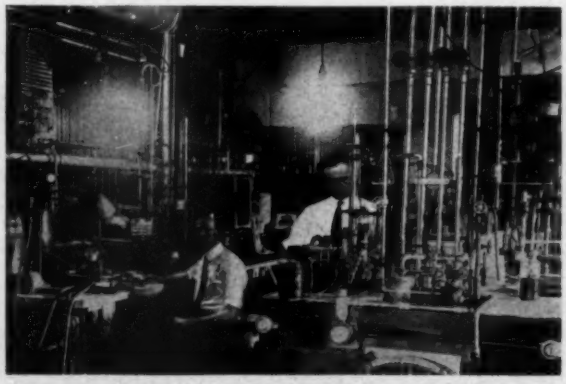
Dr. H. S. Paine, a specialist in sugar chemistry, in charge of the Carbohydrate Laboratory, and C. F. Walton, Jr., First Assistant.

AN IMPORTANT epoch in the history of the development of the candy industry in this country was ushered in when the U. S. Bureau of Chemistry started a systematic program of research work on the technical and practical phases of the manufacture of confectionery through the co-operation of the officers of the National Confectioners' Association.

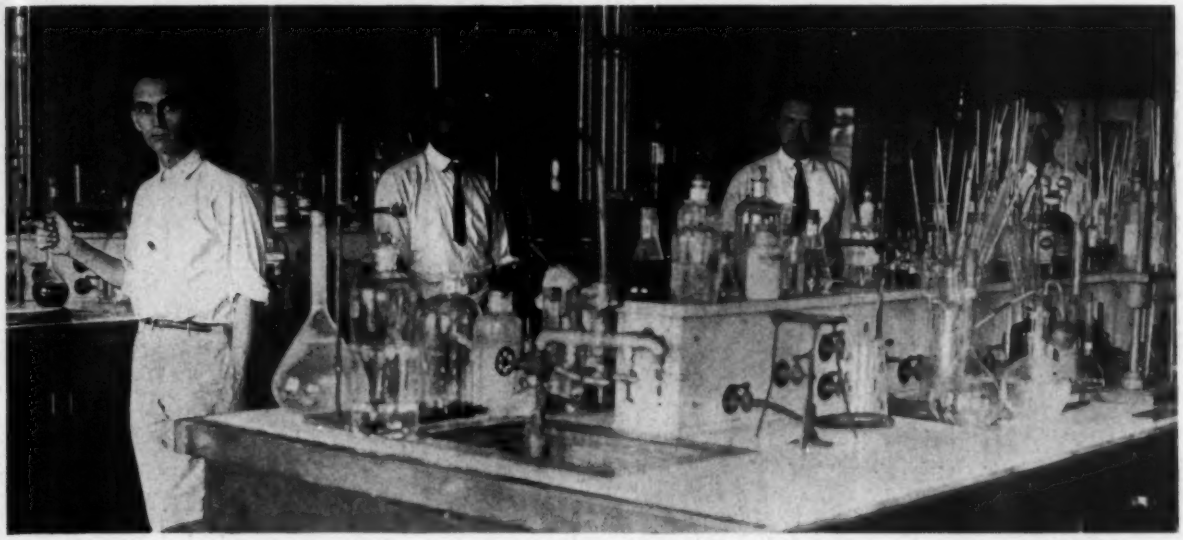
So that the industry may better visualize how a research laboratory of this kind functions in working out the how and why of candy manufacture, we publish herewith, photographs of the rooms which comprise the carbohydrate laboratory, and the results of an interview with Dr. H. S. Paine, chemist in charge. The photographs picture, in detail, the elaborate equipment with which Dr. Paine and his staff have to work. Most of the chemists on the staff of this laboratory have had practical experience in some carbohydrate industry.

The carbohydrate laboratory functions for the good of all industries producing or using carbohydrate materials. Only those problems which are of economic importance are selected for investigation—those which are of real practical significance, the solution of which may eliminate actual financial loss which now occurs, or which makes possible the use of products and materials in a more profitable manner, or the utilization of by-products which would otherwise be wasted. Such work is of more general importance and broader in scope than would pertain to an individual or small group of individuals. This being a chemical laboratory, its work naturally pertains only to problems which are essentially chemical in character and which may be solved by the application of chemical principles.

Carbohydrates are primarily plant constituents and likewise constitute an important group of foods. These two facts explain why work of this character is done in the Department of Agriculture. As an illustration of the wide range of carbohydrate materials used by the confectionery and allied industries may be mentioned starch, plant gums, cane and beet sugar, honey, maple sugar and syrup, cane syrup, sorghum syrup, corn syrup and various by-products, such as molasses and refiners' syrup, involved in the manufacture and refining of commercial sugars. In addition the laboratory is concerned with the rarer sugars of which there are literally dozens, all characteristic of various plants. Some of the sugars, for instance dextrose and maltose, formerly classed in the latter group, are now beginning to assume commercial importance in the form of preparations of high purity.



The science of candy making is given an X-ray diagnosis and treatment in this master laboratory of the Bureau of Chemistry. L. E. Dawson (seated) and F. W. Reynolds.



Left to right: W. F. Hornberger, A Helper, Dr. H. S. Pain e, in charge of the Carbohydrate Laboratory, M. S. Badollet

Fermentations

Since these investigations require thorough familiarity with different types of carbohydrates, their physical and chemical behavior, properties, etc., it is but a short step to the problems involved in the manufacture of confectionery. Among the problems of the confectionery industry, in which the carbohydrate laboratory is interested at the present time is FERMENTATION. Since this is both a bacteriological and a chemical problem, this laboratory is collaborating with the microbiological laboratory of the Bureau of Chemistry in its investigation. It will be of considerable value in connection with the isolation and study of the microörganisms involved in fermentation of confectionery if any concern having such trouble will co-operate with the department and send such samples of fermented goods as they may have to the carbohydrate laboratory. It seems probable that more than one microörganism is concerned in causing fermentation, and it is, therefore, desirable to examine as wide a range of fermented confectionery as possible in order to identify all microörganisms involved.

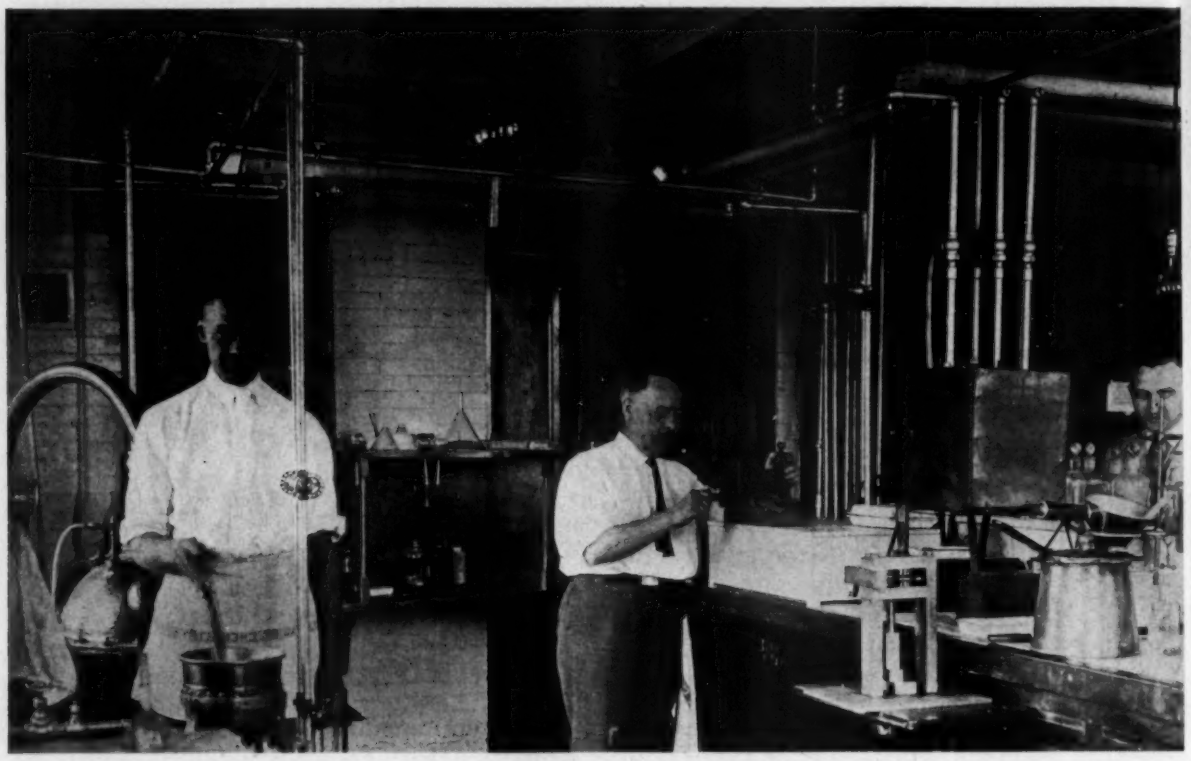
An important problem relating to confectionery manufacture which the carbohydrate laboratory has already solved is the prevention of *"leakers."* A simple method for preventing this phenomenon has been discovered. A detailed description of this discovery appears elsewhere in this issue of THE MANUFACTURING CONFECTIONER. Other data originating in this laboratory, which will appear in these pages, relate to the density of the syrup films of fondant, as determined by different batch compositions and in relation to the tendency of the fondant to undergo fermentation. This subject, as will be immediately realized, has a most important bearing on the matter of the fermentation of fondant types of confectionery.

The Discovery of Invertase

The discovery in the carbohydrate laboratory of the value of invertase in the manufacture of fondant types of confections was really the by-product of another investigation which was being conducted by the laboratory relative to the manufacture of cane syrup. This syrup consists essentially of the juice of the sugar-cane, clarified and boiled down to the proper density. The manufacture of cane syrup is an important industry in the south, approximately forty million gallons being produced annually. Difficulty in the handling and marketing of this syrup had been experienced owing to the fact that the syrup "sugared" when boiled too thick, and fermented when not boiled thick enough. This problem was referred to the Department of Agriculture (carbohydrate laboratory) for solution.

The difficulty was solved by the use of invertase, which is employed during the course of manufacture of the cane syrup, and results in the partial conversion of cane sugar into invert sugar, thereby increasing the solubility of the total sugars present in the cane syrup and preventing crystallization of cane sugar. The use of invertase has also made it possible to boil the syrup thick enough to minimize danger of fermentation, and yet prevent the crystallization which would otherwise occur under these conditions if the cane sugar present had not been partially inverted. While the above investigation was under way, the laboratory received an inquiry from a manufacturing confectioner who wrote and asked whether any means was known of producing a soft center in chocolate cream candies within a few days.

[Editor's Note: A discussion of this subject in a series of three articles has appeared in recent issues of THE MANUFACTURING CONFECTIONER.) The use of invertase was immediately tried and found to be successful.



In the center, foreground, Mr. J. Hamilton, the practical candy maker who is cooperating with Dr. H. S. Paine in conducting the research work of the Carbohydrate Laboratory on candy manufacture. At the right Mr. J. C. Keane.

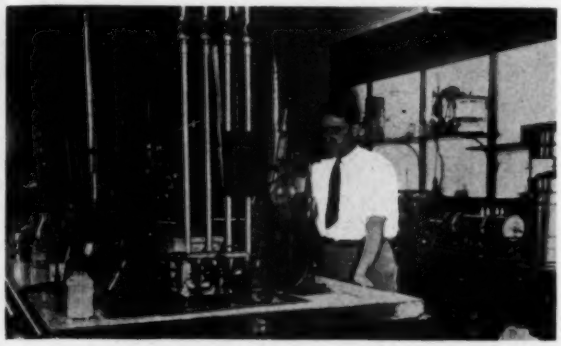
Maple Sugar Fondant

Another instance of the constructive work of the bureau is that of the application of invertase to the manufacture of an improved type of "Golden Syrup," an important commodity in many homes, hotels and restaurants in the cold, crisp days of winter when we love to hear mother, the good wife or cook preparing the batter for waffles or "hot cakes." The carbohydrate laboratory of the Bureau of Chemistry has also originated an improved method for making a maple cream or "butter," which is essentially a fondant prepared from pure maple sugar. This method was worked out at the solicitation of maple sugar producers and dealers who had experienced difficulty in preparing a smooth, uniform fondant from maple sugar which could be sold as "pure maple," and which could consequently not contain any proportion of corn syrup or other material ordinarily employed by the confectioner for preventing the formation of large sugar crystals which cause a "grainy" cream.

When the product was packaged, syrup gradually exuded from this "grainy" cream, and collected on the surface, finally undergoing fermentation in many instances. In overcoming this difficulty an inverted maple syrup was first made with the use of invertase, this syrup being boiled to required density. This inverted maple syrup was then added to the batch of pure maple sugar in the same manner as corn syrup is employed with cane or beet sugar. The resultant fondant can be prepared by the use of a mechanical beater; it has a smooth, uniform consistency, does not exude syrup and shows increased resistance to fermentation. It is obvious to an experienced candy maker, that it is impracticable to use acids in a maple product, as they ruin the maple flavor. This method and other data relating to the manufacture and use of a maple syrup of increased density which will not crystallize will be discussed further in this publication in a later issue.

Invertase may also be used to prevent the crystallization of sorghum syrup, although this product does not exhibit as great a tendency to crystallize as cane syrup. Nevertheless the Department of Agriculture has received a large number of inquiries regarding the application of invertase to the manufacture of sorghum syrup, and the carbohydrate laboratory is planning to make some tests this fall in co-operation with a leading producer in Ohio.

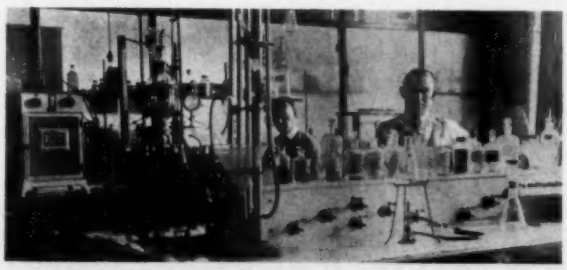
There is not space in this issue to discuss further the various activities of the carbohydrate laboratory regarding cane and beet sugar, honey, molasses, etc., but the foregoing is doubtless sufficient to enable the reader to realize the importance of chemistry to confectionery manufacture, and the value to the industry of the researches under way in this laboratory. Chemistry properly applied will pay cash dividends, but chemistry should not be blamed for the fail-



Mr. R. T. Balch in action. Those who attended the annual conventions of the National Confectioners' Association at Chicago and the A. R. C. at Cleveland this year remember Mr. Balch, who addressed both assemblies on the work of the Bureau of Chemistry.

ure of certain individuals to make practical application of chemical principles.

It is an axiom that every manufacturer should know as much as possible about the behavior of his raw materials and products and the fundamental principles involved. A chemical and physical explanation of the various changes which take place in the manufacture of the different types of confectionery has never been freely discussed by competent authorities in a form available to the entire manufacturing branch of this industry, and it is the desire of Dr. Paine and his associates to place before the confectionery industry an interpretation of the chemical and physical principles involved in the manufacture of the various types of confectionery written in ordinary every day language so as to be easily understood. When a person understands the why and wherefore of the various changes which occur, he is better fitted to overcome difficulties which arise. Inasmuch as the confectionery industry is dealing essentially with sweet materials the subject is best approached from the standpoint of the sugar or carbohydrate chemist. Dr. Paine hopes to place such material before the industry in a series of articles dealing with fundamentals, rather than a collection of formulas. This knowledge absolutely impartial, the result of chemical and physical and microbiological investigation, can then be applied by anyone to every day manufacture of confections.



Another department of the Carbohydrate Laboratory. C. F. Walton, Jr., and M. A. McCalip.

Importance of Proper Factory Lighting

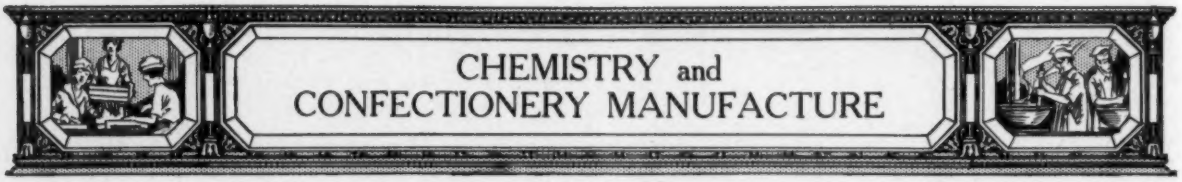
EXPERIENCE of the past few years has convinced factory executives that the money they spent in providing good lighting for their plants has been on investment which has returned good dividends—dividends in the form of increased production, or lessened cost of production, reduced spoilage, fewer accidents, and strengthened morale, all of which are reflected in dollars and cents on the profit side of the ledger. However, the item of neglected maintenance of the lighting system, which chiefly consists of cleaning of the units and supplying proper lamps, is one which is responsible for an unnecessary loss of a portion of these dividends. The depreciation of a lighting system may reduce the amount of light delivered upon the work from 10 to 50 per cent. It is therefore obvious that not only is the organization paying for light which is lost through inadequate maintenance, but that the many benefits of good lighting are sacrificed to a very considerable extent.

In the last half century there has been more development in the art of lighting than in all ages since man first picked a branch from the fire to light his way, declares Professor F. C. Caldwell, of the Eyesight Conservation Council of America, in a discussion of the problem of light and glare that has resulted from the high efficiency of the modern electric light. Glare, which is "light out of place" is now being systematically studied, and regulations to prevent it are coming into industrial and school lighting codes and being followed by state laws.

It is because mankind has tried to use modern lights as it used the old kind of lights that trouble from glare has appeared, says Professor Caldwell. No one would deliberately look at the sun on a bright day yet, having outdone the sun in the matter of glare at the light source, people do not guard against the brilliance of the modern lights, and trouble follows because of the very efficiency of the lights.

"Lighting is one of the oldest of the human arts, but until recently one of the slowest to de- their characteristics as light sources were concerned there was very little difference between the candle or whale-oil lamps of our grandmothers and the selected fagots of the cave dwellers of a thousand years ago. Even the gas-kerosene oil flames are of the last century and the carbon-filament incandescent lamps were only a little larger and a little brighter.

The three main problems in artificial lighting are to overcome insufficient light, distribution and glare, which is an excess of brightness or too sharp a contrast between the immediate light-source and its surroundings.



Preventing Leaking of Hand Rolled Goods

by F. W. Reynolds and J. Hamilton

Carbohydrate Laboratory, U. S. Bureau of Chemistry

In Goods with Small Percentages of Corn Syrup

CONSIDERABLE difficulty is frequently experienced with "leakers" in the manufacture of chocolate coated fondant confections when these are made from a cream containing a small percentage of corn syrup and the centers are molded by hand. An apparent expansion of the center takes place soon (usually within 24 hours) after coating, which ruptures the chocolate, allowing the fondant center to protrude. Such confections present a decidedly unsightly appearance to the consumer. This is particularly unfortunate because goods of this type are more expensive to manufacture than those containing a higher proportion of corn syrup. It is the purpose of this article to show how this objectionable phenomenon may be prevented. This type of leaking must not be confounded with bursting of the chocolate coating due to fermentation. This latter condition requires more time to develop.

We shall first outline the theoretical considerations that originally suggested the process which we subsequently found to give satisfactory results. The theoretical assumptions involved have not yet been proven to be correct, but the method developed has given entire satisfaction in the small scale experiments in the laboratory. We are, therefore, in the rather peculiar position of having deduced a practical method from theoretical considerations which are not definitely known to be true. This, however, does not detract from the practical value of the method.

H. S. Paine has discussed the physical structure of fondant cream in previous articles in this journal. Fondant is composed of microscopic crystals of sugar embedded in a viscous syrup. A certain amount of air is also incorporated. The plastic texture of fondant is due to the small size of these sugar crystals and the fact that they are free to move to a certain extent through the syrup which surrounds them.

Why Centers Expand

The most obvious condition which would result in the expansion of the cream center after coating is a crystallization of some of the sugar in the syrup films of the fondant which would result in an increase in volume. It is not thought, however, that this is the true explanation, for the reason that a method of remedying the difficulty, developed later on a different basis of reasoning, would exaggerate or delay rather than relieve this condition. A slow dissolving of the crystals of the fondant would not explain the phenomenon, since this would result in a decrease in total volume. A further, though not necessarily the only, explanation left us would lie in a change in volume due to a rearrangement of the sugar crystals, whereby a greater volume would be produced. The apparent volume occupied by a mixture of crystals in syrup may vary according to the arrangement of the crystals, a phenomenon to which physical chemists refer as minimum and maximum piling.

As a simple, though exaggerated, illustration of this, we may consider a box of matches. One hundred matches may be enclosed in a very small box if they are placed side by side in an orderly fashion. If they are placed in the box in a topsy-turvy manner, however, a much larger box will be required to hold the same number of matches. The apparent volume of a pile of matches may, therefore, be increased simply by rearranging them from an orderly condition to a disorderly condition.

We may think of the crystals of sugar in fondant in the same way. If the crystals are packed together in a condition known as minimum piling, the fondant may occupy less space than when the crystals are in the condition of maximum piling. When the fondant center is molded by hand we must assume that the minimum volume is produced, which assumption does not appear to be far from justified. In order for the fondant to expand after coating, the crystals must rearrange themselves so as to assume less compact positions. We have not been able to demonstrate that this actually takes place but certain known phenomena connected with sugar crystals indicate that it is possible. A sugar crystal has been shown to possess what is called a bi-polar axis. That is, under certain conditions of heat or strain the crystal may develop electrical charges. These electrical charges, if they exist in the fondant, would by attraction and repulsion very likely cause a slow rear-

rangement of the crystals, whereby the condition of maximum piling would eventually be produced, resulting in an expansion of the center and a consequent bursting of the coating. This rearrangement would necessarily take place somewhat slowly on account of the high viscosity of the syrup surrounding the crystals. If we can devise some method, therefore, to hasten this rearrangement so that it will take place before the coating is applied, the bursting phenomenon will be prevented. It is well known that sugar solutions are less viscous at a high temperature than at a low temperature. It appears, therefore, that a moderate heat treatment of the molded centers before coating would assist in this crystal rearrangement.

The Laboratory Test That Proved Successful

Accordingly, we tried heating hand-molded centers in an oven at a moderate temperature. The fondant used in these experiments was made of 10 parts cane sugar to 1 part corn syrup, and cooked to a temperature of 242° F. In all of the experiments the centers were molded and the batch divided into two approximately equal lots. One lot was kept as a control and the other was given the oven treatment. The pieces of both lots were then dipped in chocolate, precautions being taken to keep the chocolate coating on the treated and control centers as nearly identical in thickness as possible. One of these precautions consisted in dipping pieces from the two lots alternately. The coated centers were then allowed to stand over night, and the next morning the number of leakers in each lot were counted. The results of the experiments are tabulated below. The temperature at the shelf of the oven on which the pieces were placed is given in the first column, the length of time the centers were in the oven in the second column, the number of pieces in the control lot in the third column, the number of pieces in the treated lot in the fourth column, the number of pieces which developed leaks in the treated and untreated lots, respectively, in the fifth and sixth columns, and the percentage of leakers in each lot in the seventh and eighth columns.

Temp. of Oven ° F.	Time in Oven Hr.	No. of Pieces.		No. of Leakers.		% of Leakers.	
		Un- treated	Treated	Un- treated	Treated	Un- treated	Treated
108	1	23	24	13	2	57	8
106	1½	29	29	29	2	100	7
109	1½	34	33	22	1	65	3
106	3	13	21	5	3	38	14
105	3	5	16	4	0	80	0
111	1½	27	27	27	2	100	8
111	1½	12	14	7	0	58	0

It will be seen from the small scale experiments reported here that leaking or protrusion of fondant through the chocolate coating can be prevented by the very simple procedure of putting the molded centers for a short period of time in an oven or in a hot room, used in many candy factories for drying starch. Whether or not the theoretical basis upon which this method was developed is the correct one is a question with which the practical candy manufacturer is not very much concerned. We believe, however, that the heat treatment described will be found to be practicable and equally effective on a large scale.

No appreciable drying of the molded centers subjected to this treatment was found to take place. A certain amount of flattening due to the heat occurs but not enough to be objectionable. This may be partially compensated, if desired, by molding the center in form slightly elongated upward.

It is suggested, although we have not demonstrated, that the centers may be placed in rubber molds such as are used for casting and the centers allowed to sink into the molds. It is thought advisable in case this procedure is followed to heat to a somewhat higher temperature so that the fondant will become more fluid and thereby assume the exact form of the mold.

The heat treatment has been tried with butter creams and the results are just as satisfactory as with the plain fondant.

Another example of inland transportation.

Waterproof case lining paper.

Packing Candy for Export

by M. P. Sorber

Associated with J. F. Keeley, Packing Expert, Department of Commerce

THE success or failure of American export trade in candy and all forms of confectionery depends to a great extent on the packing. Many considerations enter into this phase of the business, such as the effect of moisture and different climatic conditions on the product, transportation within the various countries, pilferage, customers requirements and other elements which have a bearing on the safe arrival of the goods in a salable condition.

American manufacturers have to meet keen competition in foreign countries, particularly from England, Switzerland and in the far east, Australia. Therefore, this article will treat of the various methods of packing goods, not only in our own country, but the methods used by our competitors, taking the most successful and practical points from each.

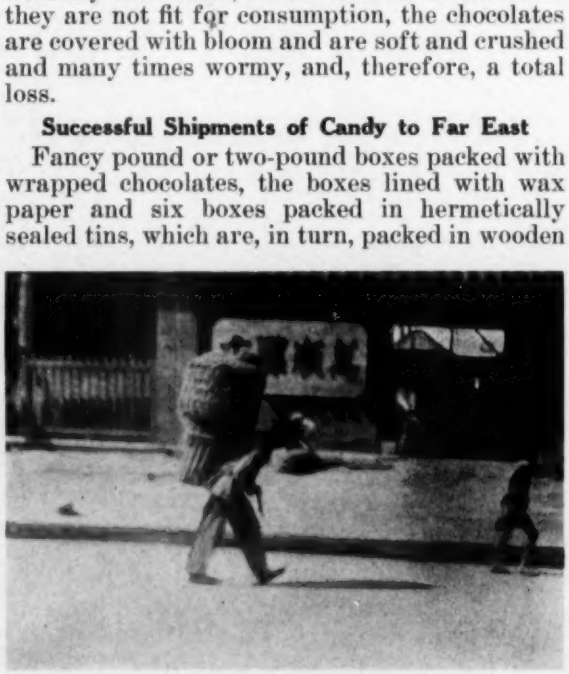
Our European market being readily available because of the frequent sailings and the climatic conditions being favorable, the problem of packing confectionery for such countries as England, France, etc., is more readily solved. Chocolate is one of the important commodities exported. It has been found that better success is obtained when chocolates are wrapped in tin-foil and packed in fancy pound or half pound boxes. These boxes are repacked in cardboard or fibre boxes with reinforced corners and then enclosed in wooden cases. The shipping case should be lined with waterproof paper to prevent deterioration by heat and moisture. Chocolate bars are frequently packed in boxes of 3 dozen bars, or loose in one or two pound boxes and then packed as above stated. High priced fancy chocolates should be re-packed in fourth or half dozen lots and bars, 3 dozen in a box and 5 gross in a case.

Cheaper confections, such as hard candies, jelly beans, licorice and so forth, are packed in pound boxes in lots of a dozen, while loose candies in 7-pound or 14-pound air-tight tin cans or boxes reach the destination in satisfactory shape. Hard candies may also be packed in 4-pound glass jars or 7-pound tins. This manner finds favor with dealers on account of the advantages in distribution. Caramels are generally packed in 14 or 28-pound pails. In all cases care must be taken that the outer case is lined with good quality of waterproof paper or tin.

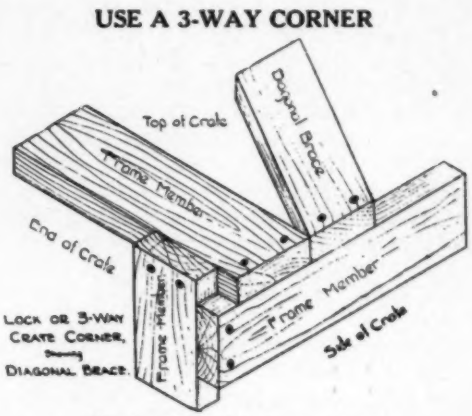
In countries where climatic conditions are adverse, such as Central America, Cuba, the West Indies, also far eastern countries, where the goods are subject to intense heat and a great deal of moisture, great care should be taken in order that the goods arrive in good condition. Most of the failures occur because candies, particularly chocolates, arrive in such a state that they are not fit for consumption, the chocolates are covered with bloom and are soft and crushed and many times wormy, and, therefore, a total loss.

Successful Shipments of Candy to Far East

Fancy pound or two-pound boxes packed with wrapped chocolates, the boxes lined with wax paper and six boxes packed in hermetically sealed tins, which are, in turn, packed in wooden

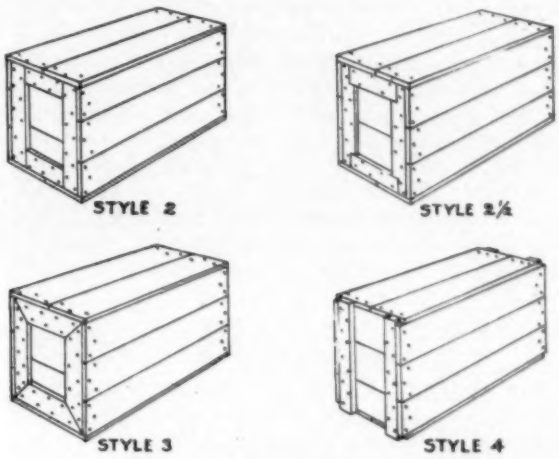


Inland transportation—China.



Construction of a 3-way corner.

The strength of a 3-way corner lies in the fact that all nails used are held in the side grain of lumber, while in any other construction some nails are held in the end grain of one or more of the frame members. It is a well known fact that nails held in the side grain of lumber have a much greater holding power than those in the end grain of the same piece.



Standard types of export cases.

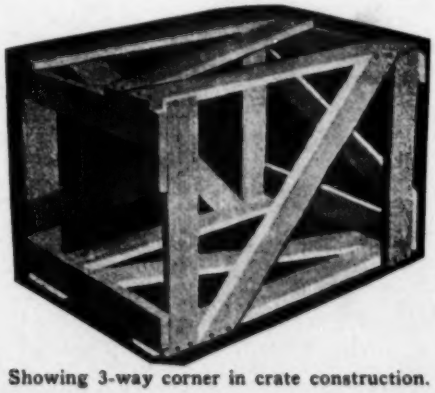
—Courtesy of Forest Products Laboratory, Madison, Wis.

cases securely strapped at each end with metal box strapping and ofttimes with an extra strap around the center of the case, constitutes a successful case for markets of the far east. This method of packing is used by a foreign country shipping to the far east. Half-pound cakes of chocolate, each wrapped in tin-foil and packed in 7-pound cardboard boxes with corrugated paper between them and the sides of the box, sixteen boxes to a case, the case lined with zinc or waterproof paper and securely strapped is a method used by one manufacturer for chocolate bars. The net weight of the box is 112 pounds, gross weight about 140 pounds and the size 2.10 cubic feet, making the box easy to handle when transportation facilities are unfavorable. When shipped to a tropical climate the tin or zinc lining is used instead of waterproof paper.

Chocolates are best packed in boxes or tins hermetically sealed. Four dozen tins can be packed in a case. Bottles are also used for candies as they are easily hermetically sealed.

In New Zealand fancy one or half-pound packages are in most favor, also a four-pound trade package. In shipping to the far east candies are shipped with better success by rail to the west coast rather than through the torrid canal zone.

Hard candies find a ready market when packed in glass jars which can be hermetically sealed and which also furnish an easy method of distribution by dealers. These glass jars are packed in wooden cases which are thoroughly lined with waterproof paper and a padding of excelsior. Excelsior padding is used to separate the jars and a pad is also placed between the layers of jars in the box. Boxes are packed with but two layers of jars except in cases where very small jars are packed. In New Zealand and the far east it is an asset to have the jars attractively labeled. All jars must be hermetically sealed as a protection against moisture. Tins may also be used but must be sealed. This precaution is taken in all cases where confectionery is shipped to countries having a hot, damp climate. In packing tins 30 four-pound or 16 seven-pound tins are packed in a wooden case. The gross weight of the four-pound cans is about 175 pounds and of the seven-pound cans about 145 pounds. A thin cardboard is placed between the tins to avoid abrasions and protect the labels.



Showing 3-way corner in crate construction.

Hazards encountered in unloading shipments.

Packing for Chinese and South American Markets

In packing for Chinese markets the candy is first wrapped in oiled paper and put up in 40-pound tins, made of the lightest possible tin to reduce the weight of the package as much of this candy is carried by porters into the interior. In South American countries, where much of the transportation inland is also by porter or by mule pack, packages should not be too heavy or bulky. Also some South American countries assess duty by weight of package and contents and this should be taken into consideration when packing goods for that region.

Marking the Cases

Size and shape of export packages should be regular to permit of advantageous stowage on shipboard. All marking should be done by stencil rather than by the use of a brush as this method makes a clear, readable legend. Care should be taken to keep all unnecessary marks off the packages and no advertising should appear because advertising matter on packages is a great help to the pilferer in selecting the packages with which he wishes to tamper.

Reinforcing Containers

The use of metal strapping on shipping containers constitutes a saving rather than an extra expense as laboratory tests have shown that the thickness of the sides, tops and bottoms of boxes may be materially reduced by the use of strapping, thus lowering the shipping weight and adding to the strength of the .package Strapping also helps prevent pilferage. Boxes may be efficiently strapped by using one strap around each end or an additional strap may be used around the middle of the box. Either nailed or nailless strapping may be used. When nailless strapping is employed the straps should be drawn tight enough to cut into the edge of the box to prevent slipping off. Strapping for boxes for export shipment should be galvanized or otherwise treated to protect them against rust. The Forest Products Laboratory at Madison, Wisconsin, and the Department of Commerce have published specific instructions regarding the proper method of selecting and applying metal strapping, which may be had on application direct or through the publishers of THE MANUFACTURING CONFECTIONER.

The illustration shows a good example of crate construction for overseas shipment of candy packed in wooden buckets or small kegs. The 3-way corner construction and diagonal bracing tend to make the crate particularly strong and suitable for this style of packing. The chart showing the standard types of export cases illustrate the scientifically made boxes that give best service for export shipment. Style No. 4 is best adapted for light shipments and should be suitable for re-packing the cardboard or fibre board boxes containing candy or confectionery. The photograph shows an export box lined with waterproof case lining paper and ready for the final closing.

Proper Nailing of Boxes and Crates

A great deal of importance is attached to the proper nailing of boxes or crates as the number and sizes of the nails vary with the different woods used and the thickness of the boards. Cement coated nails should invariably be used as their holding power is from 10 to 30 per cent more than uncoated nails. Nails not only serve to hold the parts of a box together, but they provide rigidity. It is apparent that too few nails, or nails that are too small, do not provide strength commensurate with that of the boards, while the use of nails that are too large causes splitting when the box is subjected to stresses or strains. Tests made by the Forest Products Laboratory have resulted in dividing woods into a number of classes for box making purposes according to the mechanical or strength properties of woods and their ability to take or hold nails and a table has been made which indicates the number and size of nails to use for the different woods. This information can also be secured from the Department of Commerce or the Forest Products Laboratory at Madison, Wisconsin, or from the National Association of Box Manufacturers, 844 Rush Street, Chicago, who originally prepared the nailing chart.

Legal Rights of Manufacturer to Name Uniform Selling Prices on His Goods

American Fair Trade League urges manufacturers and merchants to impress upon candidates for Congress the economic injury through cutthroat competition.

WHATEVER results may come from the national election the way seems clear for the advance of price standardization legislation when Congress reconvenes. These measures were subject to the legislative paralysis of the last session, due to the senational congressional investigations, which preceded the summer recess, and even prevented passage of some regular departmental measures. Their supporters, however, have not been idle, and preparations are being made for promised hearings before the committees which have them in charge.

The American Fair Trade League, which has led the fight to crystallize sentiment behind these "Better Business" measures, calls attention to the fact that the standard price movement is in no respect a campaign issue. The non-partisan character of its support is indicated by letters received from congressmen of all shades of political opinion in reply to inquiries from constituents engaged in various lines of trade and established in many different states.

For example, Representative Henry Allen Cooper, of Wisconsin, who was chairman of the Wisconsin delegation at the Republican National Convention, where he made the nominating speech for Senator La Follette, and who is a leader of the so-called Radical Bloc in Congress, says, in a recent letter to a constituent, that

> *"the manufacturer should be given a legal right to name a uniform price on the goods made by him."*

One of the most enthusiastic supporters of the bills now before Congress is Mrs. Mae E. Nolan, representative from California, who recently issued a strong statement advocating the standard price system in the interest of the housewife and consumer. Mrs. Nolan is the widow of a prominent Pacific Coast labor leader. Representative Winslow, of Massachusetts, chairman of the Interstate and Foreign Commerce Committee; Senator David E. Reed, of Pennsylvania, who succeeded the late Senator Penrose; Senator Arthur Capper, of Kansas, and other leaders of both houses, indicate the wide comprehensive support of this legislation. In fact, as the present situation stands, there is no so-called bloc or political faction whose leaders have not manifested their support.

But notwithstanding the rosiness of the outlook, Secretary-Treasurer Edmond A. Whittier of the American Fair Trade League emphasizes the importance of pointing out to congressmen and candidates for Congress that the pending measures are based upon principles immensely beneficial to the country at large. He summarizes them in the statement that they will enable the manufacturer of a trade-marked or branded article to protect the consumer against misleading "bargain bait" advertising. Mr. Whittier declares that a "triangle of support" is needed to turn these bills into law; that they are quite as important to wholesalers and to retailers as they are to producers.

A Square Deal for Square Dealers

Those who understand the situation know that the great preponderance of sentiment is against unfair price cutting. It is up to the merchants of the country, however, to make this fact so startlingly evident that senators and representatives cannot ignore it. Moreover, the consumer's interest should be emphasized, since, in the last analysis, it is the consumer who makes the strongest appeal to Washington. Next to the consumer, in this respect, comes the small, independent merchant, whose number is millions and who is becoming more and more alive to the fact that price cutting on standard goods is making it increasingly hard for him to make a living profit.

To these merchants the Fair Trade League has suggested the slogan—A SQUARE DEAL FOR SQUARE DEALERS.

Four of these price standardization bills were introduced in the present Congress and all are likely to be pressed for passage as soon as the legislators return to the national capital and the country settles down after the upheaval of the presidential election. Although differing in detail, the bills are alike in principle. They seek to restore to manufacturers of branded, well known goods the legal right to designate fair, uniform, living-profit prices at which such products shall be resold.

This question has been fought out in the courts and the law has become so muddled by conflicting decisions that the opponents of unfair price cutting realize that no more hope lies in that direction. Congressional legislation is the only remedy. The issue lies in the hands of the business men of the country. Their task is to impress upon their representatives at Washington the fact that these Better Business Bills are essential to the prosperity of our domestic commerce and earnestly desired by a vast majority of merchants and manufacturers, as well as consumers, as indicated in favorable expressions of representative women's clubs and housewife leagues throughout the country.

Literature upon any or all phases of the subject may be obtained from the national headquarters of the American Fair Trade League, at 71 West 23rd Street, New York.

The Office as a Production Unit

(continued from August issue)

A discussion of some details of office organization.

by Ralph G. Wells

Member Committee on Industrial and Commercial Planning, Boston Chamber of Commerce
Member of Faculty, Boston University—College of Business Administration.
Formerly President National Association of Employment Managers.

Exclusively for The Manufacturing Confectioner

FOR the convenience of readers of THE MANUFACTURING CONFECTIONER the results of our studies of office methods used by various candy firms have been combined and condensed into the following statement:

In order to cover the practice found in some of the larger offices, it is necessary to go into more detail than would be required if we were considering only the moderate-sized plant. Nevertheless, it will be found that the same principle underlies the practices in both large and small offices. The difference being merely one of application and detail.

Office Rules and Regulations

Office rules are supposed to be matters of common knowledge. The new employe finds them out by making mistakes or from the gossip of fellow-employes. The better practice is for the executive in charge of office work, or an assistant, to explain to each new worker the various rules and regulations governing the conduct of the office. Naturally, there is a certain amount of prejudice against the posting of printed rules and regulations, as this generally arouses antagonism.

One firm, however, has hit upon a happy solution. They have a mimeographed memorandum of the more important rules. This is given to every new employe at the time that the rules are explained. Yet it insures that each employe has a uniform understanding of the provisions under which he is to work.

One executive voices his objection to printed rules in these words:

"We want those who join our office organization to feel that they are becoming members of a big family in which each one is supposed to perform his part willingly, to the best of his ability and to complete his particular work, regardless of hours or rules or any other regulations. We do not want them to feel that they are under constant supervision. There are times when we find it possible to let employes off early, and we make it a rule to do this frequently in the summer time. On the other hand, we expect them to be glad to work overtime during rush periods when it is necessary to clean up the day's business.

"We do not pay extra for overtime work in the office, although we either provide supper or give 'supper money.'

"We should like to have our office opened at the same hour that our factory starts, but since we are located in a large city we must follow the same practice as the down town offices and stores with whom we must compete for the class of office help which we need."

Another manufacturer makes the point regarding printed rules that they frequently prove embarrassing when the firm wants to make an exception or change for the sake of speeding up work or cleaning up a rush of business.

Tardiness and Attendance

All offices must deal with the problem of tardiness and attendance. Records kept over a long period show that certain employes are regular offenders. Some firms find it an advantage to post up a record of the attendance and tardiness of office employes. One manager claims that since he has had this record posted in a conspicuous place there has been a steady decrease in both tardiness and absenteeism.

By keeping a definite record of the promptness with which employes come to work and their attendance, it is possible to lay off during dull seasons those whose record is the least satisfactory and not to take them on again—so that the office employes retained in the permanent force are those who have the habit of prompt and regular attendance.

It does not pay to bother with the persons who are habitually late or absent. Chronic tardiness is an indication of lack of self-control and self-discipline on the part of the employe. If moral suasion will not improve the worker's attitude on this subject, it is useless to use strong disciplinary measure.

Overtime

Nearly all firms require office employes work overtime during rush periods. None of the firms interviewed paid anything extra for overtime work, although the majority of them allow "supper money" if the employe stays after six thirty.

Vacations

As indicated in the August article on Office Problems, employes of less than one year's standing receive one week's vacation with pay, while those who have been with the company for more than a year are allowed two weeks with pay. In some instances an eight or nine months of service is interpreted as the equivalent of one year for vacation allowances. Employes are sometimes allowed to take more than two weeks' vacation at their own expense during the dull season. This latter practice gives them a longer rest and also reduces the office expense during the dull period.

In some of the smaller offices it is the practice to bring in substitute stenographers during vacations, but larger offices do not find this necessary, as the volume of office work is much smaller during the summer months. Some firms make it a rule that no vacations shall extend beyond the Tuesday after Labor Day.

Holidays

In the majority of states the observance of legal holidays is required by law. It is also desirable to follow the local custom in regard to other holidays. Naturally, during the summer and other dull seasons offices are closed on Saturday afternoon, and not infrequently all day Saturday during periods of excessive heat.

Personal Conversation During Office Hours

Although a problem with certain employes, few firms have found it necessary to lay down hard and fast rules on this point. Frequently it is necessary to caution younger persons about excessive conversation of a personal nature. Employes of the right type seldom allow personal conversations to delay work.

Personal Telephone Calls and Personal Callers

This is also a problem of the individual and one which can generally be handled effectively by a few personal reprimands from the office manager, nevertheless firms have found it necessary to be rather strict in this matter in order to avoid the abuse of telephone privileges. A careful record of all toll calls should be kept so as to avoid abuse on this score. Employes should not be allowed to receive personal telephone calls or personal visitors during office hours, except in case of emergency. There is little need for impressing this rule on the experienced office employe, but younger people need to be cautioned.

Who Is Responsible for Office Forms?

Join the Society for the Prevention of Useless Forms. In the August article it is pointed out that unless care is exercised the forms used in an office will be too numerous and will be many assorted shapes and sizes. To avoid the latter standard sizes should be adopted for forms and records. Some one executive should pass on all forms, to avoid duplication and the tendency to add a new form for every new purpose when old ones can be adapted to serve the purpose.

Great care should be spent in the selection and designing of letterheads, envelopes, letter paper, and all printed matter going out to customers or the general public. This point is well appreciated in the candy industry. Many letterheads are works of art conveying a definite impression of the character of the house and the quality of its product. Special paper of a different color should be provided for inter-office and inter-department correspondence.

The purchasing of all office supplies and office stationery should be done by one person under the control of the office executive. Supplies and stationery should be kept in a well-arranged store room under lock and key, and one individual made responsible for keeping track of the stock and issuing to the proper persons. In order to avoid running out of forms and stationery, order points should be established for supplies in the same way that this is done for raw material in the factory stores.

One firm has adopted the practice of tying up reserve stock with a special red tape to which is attached a printed tag on which is printed a notice requesting the person cutting the tape to turn the tag in immediately to the person in charge of supplies, so that a new supply may be ordered immediately.

There is danger of wastage of office supplies if they are issued in too large quantities and unless employes are cautioned against misuse. Firms who do not have a central storage place for supplies frequently find that surplus stocks become misplaced and new lots ordered before old ones are used up. The new lot should be placed on the bottom of the pile.

Who Brings Mail from Post Office?

One of the principal functions of the office department is the handling of incoming and outgoing mail. The first question under this heading is "who shall open letters." One man claims that his force does not get there early enough to open the mail, so that he or some other executive on the way down to the factory, stops at the post office, gets the mail and has it opened and sorted before the office force comes in.

It saves time to have a messenger or light delivery truck call at the post office for incoming mail early in the morning and at other times during the day if the firm's mail is heavy enough. Mail matter will reach the office much quicker in this way than if delivered by carriers. This is especially true of parcels post matter. Some firms only send a messenger for the early morning mail, depending on carriers to make deliveries during the rest of the day.

Sorting Incoming Mail

The clerk responsible for opening and sorting incoming mail should reach the office early enough to have all mail opened and ready for distribution at the time executives and others who pass on such mail arrive at their desks.

Each envelope is to be opened carefully, slitting three sides to make sure that no enclosures

are overlooked. Fasten these to the letter or the principal enclosure, so that they will not become lost or mixed with other matter. No mail of any kind is to be discarded by the mailing clerk, except on specific instructions from the chief executive. Before discarding envelopes, check enclosures to see that they contain necessary address or other identifying marks. In case of doubt, pin envelope to the letter.

In opening mail note carefully whether all enclosures indicated in the letter came in the envelope. If not, make notation on letter as follows: "No enclosures found," or "Only enclosures were ....." This saves misunderstanding and makes it unnecessary for the executive to send a letter back and insist on a search for missing enclosures. Time-stamp all first class mail with date and hour of receipt.

It will facilitate the sorting and distributing of incoming mail if it is done either at a flat-top desk or table, and a sufficient number of trays and baskets provided, into which the mail can be sorted rapidly. Special care should be taken with mail containing checks, cash, or returned merchandise. These should all be placed in a special receptacle, to be checked personally by the cashier or someone of equal responsibility

One firm gives the following instructions for assorting mail:

1. Separate first-class mail from advertising matter and parcels post mail. Arrange first-class mail carefully, sorting into respective baskets:

(a) General correspondence into general manager's basket.

(b) Customers' orders, salesmen's orders, and sales correspondence into sales department basket.

(c) Checks, cash, other valuable mail into cashier's basket, stamping these letters with enclosure stamp and noting on the letter the exact amount received—this is to be initialed by the person opening the mail.

(d) Invoices, statements, bills, and similar matters into purchasing agent's basket No. 1.

(e) Quotations and correspondence regarding purchases into purchasing agent's basket No. 2.

(f) Circulars and advertising matter not intended for other departments into purchasing agent's basket No. 3.

(g) Personal mail, letters addressed in handwriting or otherwise indicating that they are personal mail, into personal basket, to be distributed later to the individuals.

(h) Mail returned by the Post Office Department for improper postage, lack of proper address, or other reasons, into mailing division's basket.

(i) Parcels post matter should be handled the same as incoming express packages—preferably by receiving or stock room clerk.

In the majority of offices it has been found that one capable girl can act as general information clerk and see that all callers at the company's office are put in communication with the proper executive, handle all incoming telephone calls, switching them to the proper party for answer, open and sort all incoming mail, telegrams and other messages. In one large office the girl handling this work also finds time to address envelopes and to take orders from customers or salesmen over the telephone. Firms find that it pays to hire a girl of superior intelligence for this work. One who has the right personality and capacity will greatly facilitate the work of an office and also earn her salary by increased sales.

Handling Orders

All orders and letters relating to sales go first to the sales department. Actual orders are transcribed on the regular order sheet—prices, terms, and route of shipment entered on the order in accordance with either standing or special instructions received from a customer. These orders then go to the credit department and if passed are sent on to the shipping and distribution department to be filed.

Unless care is exercised, many orders are held up by the credit department on account of insufficient information. One firm obviates this difficulty by requiring the credit department either to O. K. the order or return it to the sales department on the same day it is received. This method acts as a check on the tendencies of credit men to delay orders until adequate information is received. It also calls the attention of the sales department to the fact that there is not sufficient information in the office to enable the credit department to pass on the risk, and there is upon them the burden of getting such additional information as they can through salesmen or other sources. If the credit department has asked for a report from any of the commercial rating agencies, banks, or other firms, the notation is made on the letter, so that the sales department will know what action is being taken.

Disposing of Other Mail

All quotations, letters soliciting the firm's business, or advertising matter, should go to the purchasing department to be handled by them or refer to department interested.

All incoming bills and invoices should go first to the purchasing department for O. K. and then to the bookkeeping department for entry or immediate payment, as the case may be.

Incoming cash and checks, of course, should be handled by the cashier. When cash is received, it should be acknowledged, but under ordinary circumstances the practice of acknowledging the receipt of check in payment of bills has been discontinued, unless there are some special circumstances requiring comment.

Correspondence

Perhaps the most vital part of the handling of incoming mail is the answering of correspondence. In past years not much attention

was paid to the general form of correspondence or the way in which letters were written.

Today, however, the careful business man insists that all correspondence should be answered promptly, that the letter should be well written, and that the language used express clearly the ideas which it is intended to convey. Much has been written on the subject of letter writing and the use of good English in business correspondence. Stereotyped and awkward phrases are to be avoided, and the language used should be such as will make a good impression upon the reader.

Not many firms in the candy industry have adopted the practice which is growing in other lines, of having all outgoing letters inspected by someone competent to judge whether the language used and the typographical work is up to the standard which the house desires to maintain.

Letters form so important a part of business communication today that the answering of correspondence should not be left to an untrained clerk or anyone whose command of English is inadequate or clumsy. Business letters should be interesting and free from stilted expressions, but they should also be convincing and to the point. Where the correspondence with the firm is larger than the chief executive himself can handle, he should use care in selecting those who should be allowed to write letters for the firm. Many firms have had those handling correspondence take courses in reputable schools of business English and business correspondence. This has proved a wise investment, and has materially raised the standards of the letters written and in actually reducing the time required for the dictating and transcribing of letters. The unskilled, untrained letter-writer hems and haws and takes a longer time to express himself than the man who is adept in letter writing. Furthermore, he uses more words to express his ideas adequately than the man who is skillful does in saying exactly what is required without ambiguity and in a concise manner.

Establish standards as a guide for the transcribing of letters. This includes the method of salutation, paragraphing, spacing on the letterhead, margins, and the final signature. Recently the head of one firm had an amusing experience. One day it occurred to him that he would find out how different people in his organization were signing their correspondence. To his amusement he found that each person who was allowed to sign his name to correspondence had conjured up the best sounding title applicable to his position. There was great irregularity. He found that he had many supervisors and department mangers, and other titled employes that he knew nothing of. The upshot of the matter was that at a staff conference a definite line-up as to the way in which mail would be signed was agreed to, thus avoiding the many absurdities that occurred before the matter was brought to his attention.

Sooner or later the question will arise in every firm as to who shall have stenographers and private secretaries, or whether all stenographic work will be centralized under the control of one head. This necessarily is not a problem of the moderate-sized plant, where there are only one or two stenographers. When this question arises, the chief executive must decide whether it is more important that the stenographic work be done at the lowest possible cost or whether he will pay a little more in stenographic salaries for the sake of increasing the efficiency of his office assistants. Without question the centralized stenographic department has proved itself more economical from the standpoint of stenographers' salaries and more efficient in offices where there is a great deal of routine stenographic work, such as handling of collections, mail orders, and similar matters. On the other hand, however, there are many cases where the time of an executive is worth much more to the firm than the cost of a private stenographer. There are so many ways in which the private secretary or stenographer assigned to do the exclusive work of one executive can assist him, and save him time, that it is short-sighted policy to ask high-priced men to get along with the inadequate service of a centralized stenographic department.

As an illustration, the average $5,000 or $6,000 a year executive works an average of 7 hours a day for 5½ days a week, or not over 40 hours in any one week. In the year of 50 weeks he would put in not over 2,000 hours at his desk, and is costing the firm anywhere from $2.50 to $3 an hour. This does not include any overhead cost, such as light, heat, office rent, etc. A good stenographer would cost much less per hour, and will do some kinds of work faster than the executive besides saving his time. It is false economy to try and save the time of a stenographer if there is any danger of wasting the time of the executive and making his less effective.

Outgoing Mail

Each executive and each department should have a desk tray or box in which all outgoing mail is placed, preferably addressed and sealed, ready for mailing. The clerks in each department can nearly always find time, without interfering with their other work, in which to fold and enclose in envelopes, and seal the mail of their department. This lessens the chance of mixing up envelopes and the failure to include the proper enclosures. Of course, there are firms whose mail is so large that it may be necessary to have a centralized mailing department, but as a general rule the disadvantages of the centralized mailing department outweigh the advantages, except in the handling of advertising matter, form mail and circulars, where large

quantities of the same material are being sent out.

Probably the most difficult problem in connection with the outgoing mail is accounting for postage. It is better to have the postage affixed to all outgoing mail matter under the direction of one person. In one establishment the practice is for all mail to be brought to the cashier, who then has an assistant affix the necessary stamps. This simplifies the accounting for stamps and lessens the opportunity for misuse of postage.

As in the case of incoming mail, time will be saved by sending outgoing mail to the post office at regular intervals during the day. It is a mistake to allow mail to accumulate until the last thing, dumping it all at one time on the post office. In large cities the congestion at the post office after 4 P. M. results in considerable delay. Mail early and often.

Inter-Office Communications

Various methods have been tried from time to time in handling office communications. The writer once knew a large firm where all communications between executives in the firm were written. The result was that each man spent considerable time dictating communications to other members of the organization, to say nothing of the time required for transcribing and reading of these communications. Eventually someone footed up the cost of such method and found that it was greater in the long run than the cost of any errors that might be made by the misunderstanding of verbal messages.

Without doubt, in handling inter-office communication, the simplest method is the best. Verbal messages are, as a rule, far more satisfactory than written memorandum, however, many manufacturers require that inter-department instructions be written. There are, of course, other occasions when it is desirable to send a written memorandum, as when it is not convenient to communicate verbally or when the matter under consideration requires action at some future time. In such cases there is a great advantage to having a written memorandum prepared and put in the office tickler system for the purpose of keeping the facts straight. Decisions on policy should also be written out as a guide for the future, as should also the more important instructions where there is considerable detail.

Filing

Office filing systems, unless carefully planned, are a frequent source of difficulty. In general, all filing should be concentrated in one department. This is particularly essential in the case of customers, as it is desirable that all the correspondence and letters from any one customer be kept together. Customer's orders or invoices of shipments to him can be kept in separate files, provided they are easily accessible to those who handle the correspondence.

For the average office the alphabetical system of filing is the most satisfactory and one which will ordinarily cause the least difficulty. Larger concerns find it necessary to adopt a more elaborate system of classifying and indexing their letters and records. Ordinarily such systems work well only where there is a centralized filing department in charge of a competent filing clerk and where no one is allowed to go to the files or take papers from the files excepting the filing clerk and filing assistants.

Probably the greatest filing trouble occurs where anyone in the office is allowed to take papers away and return them to the files. It is much better, even with the simplest filing system, to place one person in charge, holding this person absolutely responsible for filing, and not allowing anyone else to take papers out or put them back. Even chief executives should observe this rule. Unless this is done, papers will be frequently misplaced.

Tickler System

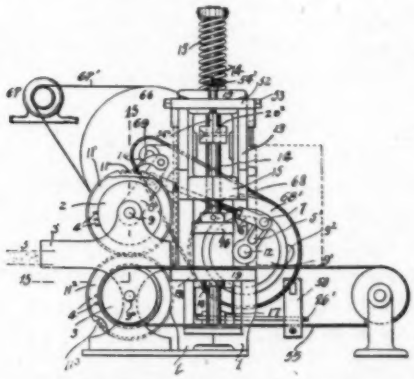
One of the greatest aids to the handling of office routine is the establishment of a tickler system in charge of some one individual. Under this plan any papers, office memorandums, or letters which an executive wishes to come up at a future time are filed in the tickler under the date when the executive wants the papers brought out. This automatic memory for the entire organization insures that matters will be taken up promptly as planned.

There are many other phases of office work which might be described to advantage. Such a description would, however, be merely a repetition of knowledge which every one knows for an office is an office after all and the methods used in one industry are quite similar to those of another. Neither does there seem to be much difference between the practices prevailing in different sections of the country. Therefore, in preparing this article the writer has endeavored to discuss only those points upon which there might be some differences of opinion or of practice.

WHAT'S NEW?

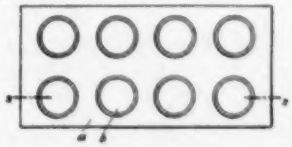
New Patents

1,507,167. Machine for making confections. Francesco Gigliotti, Springfield, Mass. Filed Apr. 16, 1923. Serial No. 632,397. 22 claims. (Cl. 107—8.)



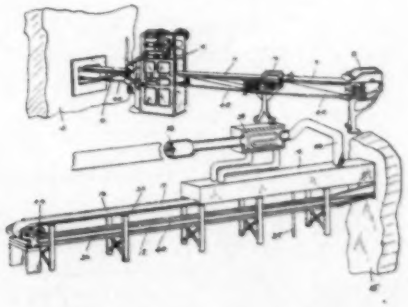
1. In a machine for the purpose described, the combination with a clamping plunger which is movable for clamping a piece of candy material of means for feeding candy under the plunger, means for actuating the plunger, the actuating means having a period of rest, or dwell during the clamping operation, means for severing the articles to be clamped, a hopper to receive sticks therein which are designed to be inserted into the finished article and means for feeding the sticks toward the finished article during the clamping operation said stick feeding mechanism being located in the path or line of travel of the article and means for removing the finished article after the clamping mechanism releases the article.

1,508,496. Mold for Use in the Manufacture of Chocolates. Anthony Angelo Ballatore, Glasgow, Scotland, assignor to Carsons, Limited, Glasgow, Scotland. Filed Mar. 28, 1921. Serial No. 456,134. 3 Claims. (Cl. 107—19.) (Granted under the provisions of the act of Mar. 3, 1921, 41 Stat. L., 1313.)



1. A flexible mold for use in the manufacture of chocolates, made of a gelatinous composition constituted by gelatine and glycerine mixed together in substantially the proportions 36 lbs. of gelatine by weight and 3 gallons of glycerine by measure, whereby a permanently flexible mold is obtained whose surface becomes glossy when immersed in hot water, thereby ensuring the easy and clean separation of the chocolates from the mold.

1,509,591. Device for Treating Chocolate Confections and the Like. John E. Davis, Cincinnati, Ohio. Filed Dec. 1, 1922. Serial No. 604,243. 6 Claims. (Cl. 34—12.)



4. In a device of the class described the combination of an elongated table, a housing mounted on the table adjacent to one end thereof, the housing having slots in its opposite ends, partitions within the housing extending between the table, the side and top of the housing, the partitions having notches in their lower edges whereby to provide openings between the chambers formed in the housing, a belt conveyor supported by the table extending through the openings in the ends of the housing and through the openings between the chambers in the housing, means to move the belt through the chambers and over the table, and means within one of the chambers in the housing for varying the temperature interiorly and exteriorly of the chambers in the housing.

The Manufacturing Confectioner's BLUE BOOK SUPPLEMENT

THE purpose of this department is to supply current information which will supplement the data published in The Blue Book in the interim between its annual editions. New products, new sources of supply, new statistics and reference data, corrections, etc., are published monthly in this department to be clipped out and pasted in their proper place in The Blue Book for permanent reference.

Correct Page 85

W. L. FLEISHER & CO. (Advertisement)

The last paragraph on the page entitled "Starch Rooms" should read

STORAGE ROOMS are maintained at the required constant temperatures, etc.

Revise Page 352.

THE RETAIL CONFECTIONERS' ASSOCIATION OF PHILADELPHIA

President: A. A. LANG.
Vice-President: M. J. HESCH.
Treasurer: M. L. KEMMERER.
Secretary: G. A. GOEBEL, 4323 Lancaster Ave.

Executive Committee

Chester A. Asher, Chairman.

R. Laurent.	**T. Marquetand.**
C. Reiher.	**H. C. Nuss.**
C. W. Horton.	**Otto Schmitz.**
T. F. Quigley.	**H. L. Young.**

Add to Page 349, Sectional Associations.

THE FALLS CITIES CANDY ASSOCIATION organized September 5th, 1924.

Jeffersonville, Ind., New Albany, Ind. and Louisville, Ky.

President: R. H. LEWIS, The Indiana Candy Co., New Albany, Ind.

Vice-President: T. J. SULLIVAN, Ideal Candy Co., Louisville, Ky.

Secretary-Treasurer: JOS. S. DAVIS, Davis Brothers, Louisville, Ky.

Executive Committee.

Chas. Evans, Frank A. Menne Factory, Louisville, Ky.

Toney Volz, Rudolph & Bauer, Louisville, Ky.

Mose Oppenheimer, Louisville Confection Co., Louisville, Ky.

Frank E. Walters, Louisville, Ky.

ACKNOWLEDGMENTS

Your book was received and believe it will be valuable to us. We appreciate this service and also your splendid paper.

HOMER J. WILLIAMSON, Indianapolis, Ind.

Just what we have been looking for a long time.

L. G. KUNZE, Chicago.

A really complete, wonderfully arranged publication. Will certainly aid purchasing. Congratulations.

H. H. HIRSCH, Chicago.

I think you established the one great need and a greater service to the candy and chocolate industry by your BLUE BOOK. Thank you.

FRANK CHRIST, Chicago.

This is a real reference book and is a valuable asset to the office of any confectioner as well as a work of art and I surely want you to know that I appreciate it very much.

BILL DIVEN, Delaware, Ohio.

Looks good—can probably utilize to good advantage.

O. H. PECKHAM FACTORY, St. Louis, Mo.

So sound and necessary, cannot understand why such a book was not published long ago.

PARK & TILFORD, New York City.

We want to compliment you on the complete work and arrangement of the BLUE BOOK and think it will be very useful.

THE GARDNER GOULD CO., Burlington, Iowa.

Just the thing for a busy manufacturer—saves time.

WARD OWSLEY CO., Aberdeen, S. Dak.

BLUE BOOK just received. We are going to use this book a lot. We are sending off several inquiries today.

C. P. PEARCE CO., Pittsburgh, Pa.

BLUE BOOK will be very helpful to the industry.

C. & S. HIXSON CANDY CO., Pittsburgh, Pa.

A wonderful performance on your part and a good and valuable help to a confectioner. You desire, and without doubt, you will get "the trade's gratitude."

ST. REGIS CONF. CO., Houston, Texas.

"A close second in usefulness to one's own recipe book."

MARIO GIANNINI, Production Mgr.

ACKNOWLEDGMENTS OF BLUE BOOK—Continued

The writer has received the complimentary copy of The Manufacturing Confectioner's BLUE BOOK which you were kind enough to address to him and which the writer considers is a book full of usefulness. You are to be complimented on this splendid edition. Thanks for sending me a copy.

CHAS. F. SOLOMON,
(J. G. McDonald Chocolate Co.)

I have returned the card acknowledging receipt of your BLUE BOOK for which I wish to thank you. I believe it will prove to be a convenient reference book, and it will probably be consulted many times before searching our files for information. You have the service well started and it will be comparatively easy to make additions in the future. There are manufacturers of equipment whose customers are not exclusively confectioners. Many of these are manufacturing apparatus that interests confectionery concerns, so that you have opportunity to make additions to your book in the future.

E. F. BRIGHAM,
(New England Confectionery Co.)

We are very glad indeed to have for reference the Manufacturing Confectioner's BLUE BOOK.

Very truly yours,
SMITH BROTHERS, INC.

We are in receipt of the Blue Book of 1924, No. 247, which you kindly sent us and feel that we can get considerable good out of this publication, and it surely is a credit to whoever had to do with getting it out. While we find many of the names of concerns with which we are familiar to us, there are quite a few new ones.

Thanking you for including us in your list, we are
Yours very truly,
LOVELL & COVEL CO.

I have not had an opportunity to examine the book thoroughly as yet, but from glancing it through, it would appear that this book should be very valuable to all buyers for manufacturing confectionery concerns and in most instances, to superintendents of manufacturing confectionery plants for many of the latter take care of their plant's needs for raw material and equipment. I wish to compliment you upon the appearance and arrangement of this book. It is equal to any publication of its kind that has ever been sent out, and far better than most.

W. F. SCHRAFFT & SONS CORP.
By E. H. Savage

In connection with this publication we might say that it is certainly a very useful book because of the information it contains and the way in which it covers the entire Confectionery Field.

F. BISCHOFF, INC.

. . . . It will be very handy, in many cases, for a Credit Department to find correct addresses when they open new accounts and references are given; also think it will be useful when people wish to look up dealers in raw materials.

Yours respectfully,
GEO. B. FARRINGTON, Treasurer,
New England Confectioners Club.

I am pleased to acknowledge receipt of the BLUE BOOK. This book I consider very valuable to the manufacturers of candies and the publishers of it deserve to be complimented on the manner in which the information has been compiled. It is a pleasure to recommend the BLUE BOOK to those in our industry.

KING CANDY COMPANY, Ft. Worth, Texas.

As there wasn't enough space on the postcard to say all we would like to we decided to write you a letter about your first edition of the BLUE BOOK. About three years ago when we first started to make candy, I went to the Public Library in New York trying to find just such a book, but as you know, did not find it but did find The Candy Manufacturer now The Manufacturing Confectioner, and it sure was a big help to us but not One-Two-Six what the BLUE BOOK would have been. There sure has been some great work put over in the last six months in the Candy Industry as follows: Candy Gambling Eliminated, New Association to Govern Trade Problems, 1924 Edition of THE BLUE BOOK.

KNIFTY KNIBBLES, Plainfield, N. J.

A very valuable guide for every confectioner's wants—concise, yet complete. Congratulations are due you.

RICHARD H. SHEEHAN,
Secy. Cleveland Candy Club, Cleveland, Ohio.

I am delighted with the first issue of the BLUE BOOK. It is evident in many ways that you have spent a great deal of time in arranging the book so that it would be of maximum convenience to buyers. It is one of the best reference books that I have seen for some time, because of the number of cross indexes and classifications which should enable the reader to locate immediately such information as he is seeking. With best wishes for the success of THE BLUE BOOK, I am

RALPH G. WELLS, Boston, Mass.

In addition to acknowledging receipt of your BLUE BOOK by postal card, I wish to say that I appreciate very much your sending same to me on account of the Association and I believe that there is much matter therein that will be helpful to our members.

GEO. E. BURLESON,
Secy. Western Conf. Salesmen's Ass'n, Chicago.

I received a copy of the BLUE BOOK only a few days ago and have already had occasion to use it once or twice. It is my opinion that this is a valuable work and you deserve great credit for furnishing the confectionery industry such a publication. The BLUE BOOK is a work in the right direction. What the confectionery industry needs is more specific information in compact form where it will be available for use when needed. Thank you for the loan of this book.

J. M. CLARK,
Secy. Southern Wholesale Conf. Assn., Atlanta, Ga.

BLUE BOOK received. We greatly appreciate it and find it fills a valuable place with all interested in the industry represented. Have already heard many favorable comments on it.

E. M. COSMER.
Secy. Colorado Conf. Assn., Denver, Colorado.

We consider this book very useful and appreciate very much your sending it to us.

IDAHO CANDY CO., Boise, Idaho.

From all appearances we believe this to be very useful if kept up to date.

PICARDY CANDY CO., LTD., Winnipeg, Canada.

Something the industry has been waiting for. Very complete and concise. We thank you for our copy.

LANG & COMPANY, Candy Dept., Portland, Oregon.

In my opinion the BLUE BOOK is a wonderful book and will be highly appreciated by all candy manufacturers.

D. A. ZANONE, Chicago.

We find this a wonderful book, covering all branches of the trade.

THE MARY OLIVER CANDY SHOPS, INC.,
New Haven, Conn.

The book is very useful. Have found a number of firm's names we have been looking for.

BUTTER-NUT CANDY COMPANY, Pittsburgh, Pa.

Wonderful! Something that fills a long felt want.

YAKIMA CANDY CO., Yakima, Wash.

Am glad to have such a handy book of information—it is a complete book and you are to be commended for your enterprise.

O. L. MOORE, Secy. Society of Mfg. Conf., Chicago.

We find this book of valuable assistance and help in our Purchasing Dept.

E. GREENFIELD'S SONS, Brooklyn, N. Y.

I consider this book a great asset to anyone connected with our industry.

W. A. MILLER CO., Cambridge, Mass.

This BLUE BOOK is the most valuable asset to the buying department of a manufacturing confectionery business we have yet found and you can accept our best thanks and cooperation in the future.

THE D. L. CLARK CO., Pittsburgh, Pa.

Very good—the best ever.

NOVIA CANDY CO., INC., Brooklyn, N. Y.

Thank you for the BLUE BOOK. I am impressed with the thoroughness manifested in its mine of information relevant to the confectionery trade. It is evident that much thought and energy has been bestowed upon the production of the book, the value of which, as a work of reference, is enhanced by your wisely including a thumb index.

ROWNTREE & CO., LTD., York, England.

To encourage export, we have had prepared by one of the leading exporters, a report on the sales possibilities of American confectionery in various countries of the world, all the data having been gathered from first hand authentic sources.

These reports will be published monthly for the purpose of creating a wider interest in foreign markets for confectionery.

Specific information regarding individual products or reports on special countries in advance of regular publication may be obtained gratis upon request.—EDITOR.

A Survey of the Confectionery Market in

MEXICO, HONDURAS, COSTA RICA

Mexico

MEXICO is the fourth largest American Republic as regards territory. It is bounded on the north by the United States, on the east by the Gulf of Mexico and Caribbean Sea, on the south by British Honduras and Guatemala, and on the west by the Pacific Ocean.

The climate is modified by the great elevations and is largely determined by vertical zones. Mexico is partly in the Tropical and partly in the Temperate Zone. It is almost impossible on account of the great extent of the country to definitely fix the seasons, they may be designated in a general way as follows: Rainy season, middle of May to middle of October, when rainfalls are exceedingly heavy and of almost daily occurrence; the dry season lasts the balance of the year. Very little rain falls during this period.

In exporting confectionery to Mexico there are several features which must be considered. The high import duty practically stops the sale of cheap and medium grades of confectionery. Division No. 116 of the Mexican Customs Tariff places a duty of "one peso a kilo net (50c U. S. currency per 2-1/5 lbs.) plus a 50 centavos (25c U. S. currency) additional federal tax, plus 10 centavos (5c) additional federal tax, plus 2 centavos (1c) municipal tax." This is a total of $1.62 Mexican money (81c U. S. currency per 2-1/5 lbs.). The immediate container is included in the net weight but not the outside packing.

This high protective duty of 37c a lb. coupled with the fact that the native purchasing power is low, naturally creates a limited sale.

Local manufacturers can undersell imported candies because they do not have duty and because they have the source of supplies at hand. Labor is cheap and Mexico produces its own sugar, cocoa, cocoanuts, fruits, etc.

"La Suiza" of Mexico City and a small factory in Merida, "La Gran Fabrica de Chocolates de Clemonte Cepeta V," produce a limited amount which is shipped to smaller cities.

As there is not sufficient business for the jobber or wholesaler, candies are imported by the retailer or by the grocers with orders for other goods. These dealers work on a 25 per cent basis while the candy peddler works on a 60 per cent basis.

The cheaper candies are sold by ambulant vendors who make the candies in their homes from such articles as sugar, milk, ripe pumpkins, sweet potatoes, nuts, spices of cactus, etc., peculiar to the local tastes. "Pinonate" and "Pinonata" made from the dainty nuts of the pinon, a species of pine, to which other nuts sometimes are added; "Dulces de loche," milk candies; "Leche de Pina," pineapple candy; "Pasta d'Almendra," "posta de Nogales" and "charamoscas" are sold by these vendors.

Much use is made of local fruits and even vegetables boiled down in syrup obtained from the crude sugar-cane and known as "peloncilla." The quince, guava, pear, fig, apple, pumpkin and squash and sweet potatoes are used in this manner. A candy made of goat's milk and syrup of sugar, boiled down until reasonably hard and sold in various shapes and flavors is also popular as is also a brittle candy containing pecans or walnuts. "Pan dulce," a sweet bread candy, is also well liked.

As the products cost but little and as there is no overhead expense, the profit is great. Some of these merchants own a little "two-by-three stand" while others carry their stocks on their shoulders, seldom greater than $5.00 at a time, and go into the central and more frequented "plazas," parks and street corners disposing of their products at a cent a portion.

These "dulces" or sweets are cheap and find a ready sale, but not so the manufactured candies which bring two or three times the prevailing price in the United States. Lollypops, or all-day suckers, cost from 2c to 3c each, gum drops three for five cents, a five-cent chocolate bar retails for fifteen cents, while cheaper grades of fancy chocolates retail from $1.00 to $3.00 a pound.

Mexico wants American candy but can only afford to buy the better grades because of the duty. The demand is for candies selling at 20c to 25c a pound. As the import duty alone is greater than the amount they want to pay for candy plus freight and duty, it will be seen that no business can result.

However, in spite of this duty, Nestle's chocolate, bars and Swiss milk chocolate cakes and Swiss chocolate drops are being sold as well as several varieties of Spanish nougat and American chewing gum.

The only candy that can be sold to Mexico is the real high-grade chocolate, each bar in an individual tin container. The only hope of entering Mexico lies in the packing not only that the expensive candies retain their freshness, but in convenient sizes and attractive designs. Bright-colored ribbons will aid greatly in selling high-class boxes.

America exported for the fiscal years ending June 30th, in 1912, $17,145;

in 1913, $20,132; in 1914, $21,375; in 1915, $20,019; in 1916, $18,375; in 1917, $73,750. For the calendar year 1918, $35,413; in 1919, $63,436; in 1920, $102,698; in 1921, $80,204.

Honduras

HONDURAS is bounded on the north and east by the Caribbean Sea, on the south by Nicaragua, and on the west by Guatemala, Salvador and the Pacific Ocean. It has an area of about 46,000 square miles and has a population of 1,278,000. The people of Honduras are chiefly Indians or half castes, with a considerable mixture of Spanish blood. On the northern coast and in the banana region there is a large Negro population, chiefly from the West Indies.

Along the Atlantic or Caribbean coast the climate is generally torrid but somewhat modified by trade winds and rain falls. Hurricanes are not common. The Pacific coast also has a torrid climate. In the interior, in the high altitudes, the climate is temperate, very healthful and pleasant. In Tegucigalpa and vicinity the temperature averages 74 degrees. The wet and dry seasons are not very plainly marked. On the Pacific coast the dry season begins in November and ends in May; the rainy season begins in May and ends in November. On the Atlantic coast the rainy season lasts from October or November to March or April.

The language in general is Spanish. On the north coast English is coming into general usage because of the important American companies located there.

The silver peso of 100 centavos, 25 grams in weight, is the unit of value. The silver of Salvador and Nicaragua circulate at face value. Gold coins are legal tender, but only a few have been minted; they are retained as souvenirs and do not circulate. The value of the peso fluctuates with the price of silver. The silver peso is worth at par $0.40 United States gold, but the paper notes may be roughly calculated at between 35 and 40 cents.

The market for American candy is small in Honduras. The demand is for hard candies in four and five-pound tins and chocolates in one-pound boxes. As stale candy spoils sales, no large quantities are imported at any one time but in numerous smaller shipments. The business is not a large one but is steady, shipments being required weekly or fortnightly.

The demand for foreign confectionery is likewise small. The English candies are imported in seven-pound tins. About 80 per cent of the imports of confectionery were received from England before 1915, consisting principally of Cadbury and Morton's chocolates. This trade has declined quite a bit since the war as a result of a Guatemalan invasion of the market. The Guatemalan candy although inferior in quality is preferred. In the first place it is cheaper because of low manufacturing costs such as help, source of supply, and is aided by a reciprocal tariff. Another advantage is that candies can be procured fresher as the distance is less.

The Guatemalan candy is made in smaller pieces because most stores give a piece of candy away as "chascara" or gratuity with every purchase. As the smaller the number of pieces, the greater the number to the pound which makes them last longer. Confectionery is imported by retailers who also act as jobbers. The jobbing commission is from 10 to 15 per cent and the retailers' profit from 30 to 50 per cent.

Confectionery may be sold to any kind of a store. Grocery stores and bar rooms handle medium as well as cheaper grades of confectionery. A hardware store may handle canned peaches, flour or satin ribbons. The small stores called "pulperias" all handle a cheap grade of confectionery. The prices vary naturally according to the quality and place of sale. A fair grade of chocolates in fancy boxes retails for from $1.20 to $1.40 per lb, while hard candy sells for from 20c to 30c a pound. These candies are imported c.i.f. or f.o.b.; the usual terms of sale being 30 days net.

The importing trade is visited by traveling salesmen who not only cover this territory but other nearby countries. Exclusive representation is often given with success. This agency is sometimes divided, one agent for the North and the other for the South, that is, from the town of Comayagua to the Pacific coast.

The duty on confectionery is 0.15 pesos per ½ kilo according to section No. 801 of the Import Tariff. These duties are levied on gross weight. In addition surtaxes must be paid.

Catalogs, commercial samples, and commercial advertisements should not be sent by parcel post, as in this case they are subject to the duties and surtaxes imposed by the tariff. Catalogs, plainly marked as such, pay $0.01 per half kilo. Commercial samples coming in small pieces of less than 25 pounds weight, and not usable, are free of duty, but if they exceed this weight they are assessed at $0.005 per half kilo. Registered packages pay no duties.

The imports from the United States for the fiscal years ending June 30th, were in 1912, $11,825; 1913, $14,598; 1914, $21,392; 1915, $20,152; 1916, $17,929; 1917, $23,020.

For the calendar years 1918, 1919, 1920, 1921, the imports were respectively, $11,617, $36,311, $62,035, $41,693.

Costa Rica

COSTA RICA is bounded on the north by Nicaragua; on the northeast by the Caribbean Sea; on the south and southeast by Panama; and on the west by the Pacific Ocean. It is the southernmost of the Central American Republics and has an area of 18,400 square miles, and has a population of about 460,000.

Most of the inhabitants, except in the case of the Limon district, are of European descent. The pure Spanish type is marked, many of the people or their antecedants having come from Galicia. The Limon district has quite a number of blacks, mostly of the West Indian origin.

There are two seasons—the winter or rainy season and the summer or dry season. The dry season extends from December to April and the wet season from May to November or December, or during the prevalence of the southwest monsoon. There is a fortnight of dry weather during the month of June. The coldest months are December, January and February.

The national language is Spanish but English is spoken and understood by a very large number. The monetary unit is the silver colon, whose value ($0.465 at normal exchange, 7.$.) fluctuates with the price of silver and the rate of exchange.

American candy is desired in Costa Rica because of its quality but its sales are hampered by the fact that local production can be made cheaper. This is because the duty of 10½c a pound must be added to the cost price of the American product.

However, the better grades of American confectionery are readily sold to the rich and the foreign element. This candy is sold in tins of various shapes and sizes, to exclude dampness. It is usually imported by both wholesaler and dealer from New York commission houses but the retailers buy direct from the factory in small amounts. The Chinese stores are large purchasers of American confectionery.

The duty according to section 110 of the tariff "on confectionery of all kinds" is 0.50 colons per kilo or 10½c per pound. "Medicinal pastilles not specified" according to section 122 pays a duty of 1.50 colons per kilo. Customs duties are calculated on gross weight, and are paid in colons at the par rate of 46.5 United States gold. There is a surtax of 2 per cent and a wharfage tax of 1 centimo per kilogram.

The exports from the United States for the fiscal years ending June 30th, were, 1912, $6,507; 1913, $7,276; 1914, $5,803; 1915, $5,670; 1916, $20,516; 1917, $9,871.

For the calendar years 1918, 1919, 1920, 1921, the exports were respectively, $1,048, $13,082, $33,476, $5,171.

Outlining the Foreman Study Course

The eighth of a series of twelve articles on Foremanship

by J. K. Novins

BEFORE outlining the study course for the foremen group conference at least three things should be taken into consideration: 1, the length of the course; 2, the special needs of the plant and the foremen at the time; and 3, whether the course should start with general principles and then work up to practical considerations, or the reverse.

If the course is intended to be a lengthy one, lasting a year, two or three years, it is presumed that the instructor can then touch on the history of the plant and the industry, the plant's general and labor policies, without in the least minimizing attention to practical considerations involving the individual foreman's managerial problems. Also, the subjects treated in the longer course may be treated more thoroughly than in a short and intensive course.

A short course may talk up subjects that ought to be covered in a more lengthy course, but more often the short course is merely an elementary and introductory one, leading subsequently to the inauguration of a lengthy, and some permanent course of training. The length of the course may depend a great deal on the special needs for training at the time. A special effort to increase foremen's efficiency and bring about greater production to meet greater demands on the company's products will call for a short and intensive course designed to bring quick results. A lot depends on the nature of the industry, the technical knowledge possessed by the foremen, and the complexity of processes.

Start with General Principles

The general practice is to start the course with general principles and then work up to actual practices within the plant. One reason for this is that the men are introduced to matter with which they are already familiar, and by acquainting them with generalizations you place them in a position where they will better interpret practical problems. That is, they will think out the problems from the point of view of the entire plant organization rather than from a narrow production standpoint.

The entire course program, and the individual conference programs should be outlined in advance. If possible the outlines should be furnished the men at the start of the course. A week or two before each conference the men should be furnished with an outline of the conference program.

For purposes of comparison, and as a guide to the conference organizer, we will now present typical outlines actually used by study groups and recommended by foreman-instruction specialists. The first is the outline of a standard twelve-week course which is being used in several hundred large and small plants, among them Swift & Co., which has introduced the course in its 28 plants in all sections of the country. This company's foreman training program is regarded as the most extensive educational campaign ever undertaken by a company within a short period of time. The twelve-week course is divided into six units, each unit covering two weeks of group and individual study, and is outlined as follows:

Unit I—Team Leadership

Your Share in Production.
The Starting Point for Promotion.
How Teamwork Developed.
The Six Types of Business.
The Coming of Machinery.
Economics of Industry.
Factors in Successful Manufacturing.
Quantity Production.
The Business as a Unit.
Employer and Employe.
Human Nature in Production Work.
Self-Analysis — Testing Personal Effectiveness.
Organizing Yourself for Advancement.

Unit II—Handling Men

The Good Foreman Is a Diplomat.
Leadership Can Be Acquired.
Handling Men Through Personality.
Handling Men Through Self-Interest.
Handling Men Through Organization.
Handling Men Through the Pocketbook.
Stimulating Individual Diligence.
Differential Piece Rate System: Task and Bonus Systems.

Difficulties in Handling Men.
Helping Men to Play Safe.
Helping Men to Think Straight.
Helping Men to Make Good.

Unit III—Organization

The Organization Chart.
The Organization at Work.
When Production Reaches Its Highest Level.
Steps in Forming the Factory Team.
Holding the Team Together.
Labor Turnover—Its Cost—How It Can Be Reduced.
Hiring and Firing.
Knowing Your Men.
Three Factors in Man-Management.
Team Spirit—Getting the Feeling of "Our" Plant and "Our" Organization.

Unit IV—Handling Equipment

The Application of Machinery.
Types of Manufacturing.
The Plant.
Outside Factors Which Affect the Plant.
Plans and Layouts.
Machinery and Equipment.
Handling Materials.
Waste, Deterioration, Spoilage.
The Purchasing Organization.
Packing and Shipping.
The Stock Room.
Routing—Cutting Out Waste Motions.

Unit V—Production Records

Why Efficient Production Involves Record-keeping.
The Kinds of Records That Are Kept.
Charts.
The Requisition.
Cost Accounting.
The Three Elements in Production Costs.
Systems of Cost Accounting.
Overhead.
The Cost Sheet.
The Auditor an Advisor.
Statistics—Their Proper Classification and Uses.

Unit VI—Principles of Management

Plans of Organization.
The New Elements in Management.
System—A Necessary Tool, Not a Master.
The Workmen's Interest in Increased Production.
Internal Factory Organization.
The Planning Department.
Need for Labor Engineers.
Human Factors.
The Path of Advancement.

By way of contrast let us take a three-year course, such as was recently suggested by Henry C. Link, vocational education authority. According to Mr. Link the topics covered during the first year of the three-year course should be lined up as follows:

1. *Company's policy and the story of the company's growth.*
2. *The nature of the company's product or service in relation to similar products or similar services rendered by other companies in the same field.*
3. *Advertising, sale and distribution of the company's products.*
4. *Relation between the public and the selling department and the effect of this relation upon the manufacturing departments.*
5. *Cost department in its relation to the selling department and to the various manufacturing departments.*
6. *Purchasing and store departments.*
7. *Maintenance department.*
8. *Planning or industrial engineering department.*
9. *Experimental or development department.*
10. *Industrial relations or personnel department and labor policies of company.*
11. *A study of each of more important manufacturing departments showing flow of material and the relation which each of these departments bear to the others.*

Mr. Link suggests that the second year of the course should cover the ground more specifically to meet the individual problems of the foreman and the factory. For this purpose, he suggests, the group should be smaller. He suggests that the subject matter be grouped under the following headings:

1. Material Problems.
2. Equipment Problems.
3. Labor Problems.

The same ground should be covered during the third year of the course, but the matter should be gone into more thoroughly, and foremen should be called upon to settle important problems.

Summary of Courses

Dr. Roy W. Kelly, former Director of the Harvard University Bureau of Vocational Guidance, suggests the following outline in his book, "Training Industrial Workers":

1. Plant, machinery, equipment, materials, and processes or operations: Plant layout: power, purchasing, receiving and distributing materials, the shipping department, stockkeeping, routing, classification of processes or operations, standards of output, maintenance or upkeep of department.

2. Company organization and policies: Functions of executives and relations between departments; special administrative problems affecting foremen; history and policies of the company.

3. Planning the day's work: Scheduling and routing; elimination of waste in materials, idle machinery and unnecessary labor; fatigue, time study, aims and methods of the planning department, inter-departmental co-operation, teamwork.

4. Production records and reports: Cost accounting, inventories, methods of distributing

overhead, requisitions, job and pay tickets, reducing waste, technique of making and filing reports, use and methods of preparing special reports.

5. Employment and service management: Aims and methods of the employment department; interpretation of statistics of accidents, infections, lost time, labor turnover, absenteeism, etc.; proper attitude toward promotions, transfers, discharge and discipline; wages and hours of labor; stimulating individuals and groups to better accomplishment; tact in handling employes; hygiene; plant sanitations; home and community problems affecting the shop; job specifications; rating employes.

6. Training employes: Job analysis for training purposes, steps in the learning process, co-operation with the plant educational director and with community institutions, what training has accomplished in other plants or other departments, developing esprit de corps.

Technical Training

In addition to the production and management course some time should be devoted, if possible and when time permits, to some technical training. That depends largely on the technical training the foremen have already had. The foremen should be taught the special uses of new and old tools and they should be acquainted with new processes.

In some plants the foremen are given special courses in shop mathematics. This is a difficult branch to teach, especially where the foremen have not received high school training in mathematics. The foremen are taught shop arithmetic, shop algebra, shop geometry, shop trigonometry and logarithms, and they are taught how to apply formulae to every day shop operations.

Outline for a Single Group Conference

We will conclude with a reproduction of a typical outline for a single group conference. This was used in a plant where foreman-training is in progress:

Subject: Aim of Management.

I. Interpretation of Management.

- *A. Broad:*
  1. *Gathering data relating in general to*
     - *a. Conditions.*
     - *b. Methods.*
     - *c. Processes.*
     - *d. Results.*
  2. *Applications.*
     - *a. Interpreting data.*
     - *b. Establishing of standards.*
     - *c. Means of utilizing data and standards.*
     - *d. Establishing means of further investigations.*
     - *e. Securing maximum prosperity for employer, employe and community.*
- *B. Narrow:*
  1. *Collecting data relating to*
     - *a. A particular or specific activity.*

II. The three components, broadly speaking, in management:

- *A. Organization:*
  1. *Division of work, to be done into defined tasks.*
  2. *Assignment of these tasks to individuals.*
  3. *Deals with qualifications and characteristics of human beings:*
     - *a. Engineer's type (Edison, the Wrights, Bell).*
     - *b. Executive type.*
     - *c. Specialists.*
     - *d. Functionalists.*
- *B. Systems:*
  1. *Methods pursued by organization in carrying out tasks.*
- *C. Administration:*
  1. *Work of organization in operating, the management mechanism or system.*

What's Your Problem?

P. D. 53. *We have been making three or four items of goods in revolving steam pans and we wish to make more of this goods and install more pans, but we have had difficulty in turning out satisfactory appearing goods. The finishing or polishing has given us a great deal of difficulty and in securing a smoothness on some goods has been hard for us to accomplish.*

For instance, we take a lemon drop and put a pan coating on it and then polish it, it is a little rough in places and not smooth like jelly beans. When we come to coat it the coloring matter becomes mottled and we do not get as nice a polish as we would like.

Polishing Pan Work

Refer the party asking this question to the May, 1923, copy of MANUFACTURING CONFECTIONER.

He is doing this coating, I infer, in hot pans. The spots he refers to may be due to several different things. He should study these points: (1) His pan may be heated too much; (2) he may be adding his syrup in too large charges; (3) he may not surface the goods properly. The last charge should be dried with powdered sugar and after it is *thoroughly* dried just enough syrup added to take up the last of the powdered sugar.

On the whole, I am inclined to think that he is trying to get too great capacity from his present equipment and is, therefore, putting too much goods in each pan and rushing the process to a point where each charge is incompletely dried. This or too rapid revolving of the pans would cause his trouble.

Would you please give us instructions (or advise us where we could get instruction) in the manufacture of candy mint tablets, manufactured on a regular compressed tablet machine?

The chief ingredient is powdered sugar. We would very much like to obtain different formulae for the production of these mints, and any assistance you will be able to give us will indeed be appreciated.

Mints

Formulas for this work amount to nothing. It is all a matter of handling. The process is as follows for a beginner. The equipment varies as the volume handled increases.

Make up a syrup of one part of C. S. U. 45° and two parts water.

Place 200 lbs. of very fine 4X sugar in a dough mixer and mix with 12 lbs. of this syrup.

Rub this paste through ⅜-inch mesh wire screen catching it on muslin bottom trays to a depth of about one inch.

Place these trays in a dry room at about 120° F. and allow to dry thoroughly, then crush the sugar between steel rolls or with a heavy rolling pin.

Mix 98 lbs. of this dried sugar with 1½ lbs. of powdered cornstarch and ½ lb. powdered steric acid. This mixture must be very complete. Keep the mixture in a constant state of agitation and spray with the flavoring oil desired.

It is best to do this last mixing in a tight mixer provided with a spray for the oil.

Trouble may develop due to incomplete drying of the sugar or the shape chosen for the tablet. In this event communicate again.

Candidates
—Ancient and Modern

The word "candidate" comes from the Latin *candidus*, white, because instead of the gorgeous coatings affected by triumphant emperors and generals, Roman vote-hounds wore the common white woolen toga. This was to show their humility, and also the more easily to show their wounds. It seems strange to us, who realize just how candid as well as just how humble is the average candidate, that the word "candid" comes from the same source.

This is the day of coated "candied dates" and other such candidates for the favor of the male and female electorate, and Rice's Coatings have been triumphantly elected.

The coating is in a sense your representative—being the part of your chocolate that is in evidence to the customer. A Rice's Coating is smoother than any pre-election promise, and while rich, is unquestionably pure—an ideal representative of the better brands of chocolates. It makes an instant appeal—it decides the people's choice. It assures a firm product and a firm market.

Rice's Coatings are used on the choicest brands of chocolates. In fact, they suggest quality at a glance. Write us.

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The Strength of
MID-WEST
Shipping boxes lies in their high resilient Corrugated ARCH Construction

The famous leaning tower of Pisa. 183 feet high. 13 ft. 8 in. out of perpendicular. After over 1300 years the arch construction is still intact.

Forty generations of men have come and gone since the famous leaning tower of Pisa was built. The continuous strain, because of its peculiar leaning position, and the torsional shocks of hundreds of earthquakes have failed to destroy or weaken it. Its nearly 200 arches are still intact—a wonderful example of the strength and resistance of the arch.

The hundreds of arches in the corrugated walls of Mid-West shipping boxes have the same proportionate strength. High, straight-sided, resilient, they offer an aggressive resistance to the shock, vibration and pressure caused by rough handling during transit to consignee. Millions have been saved to shippers by the 30% to 70% reduction in breakage or damage the Mid-West box makes possible.

The increasing use of Mid-West Boxes in your field is entirely due to their filling a need—BETTER.

For shipping economy—use Mid-West boxes. They conform to the strictest railroad specifications—even to **highest test liners.** Your request will bring an expert designer to build a box around your product at your factory—without cost or obligation to you. Write us today.

Our "Perfect Package" Data Sheet is free on request

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